

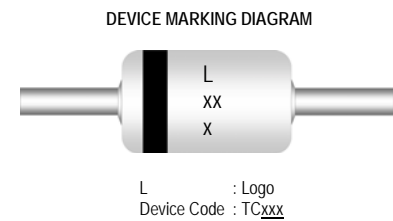
## 500 mW DO-35 Hermetically Sealed Glass Zener Voltage Regulators



### Absolute Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise noted

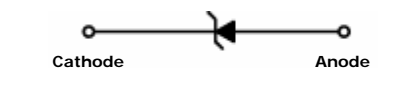
Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	$^\circ\text{C}$
Operating Junction Temperature	+175	$^\circ\text{C}$

These ratings are limiting values above which the serviceability of the diode may be impaired.



### Specification Features:

- Zener Voltage Range 2.0 to 75 Volts
- DO-35 Package (JEDEC)
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- RoHS Compliant
- Solder Hot Dip Tin (Sn) Terminal Finish
- Cathode Indicated By Polarity Band



ELECTRICAL SYMBOL

### Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TC2V0	2.0	5	100	120	0.5
TC2V2	2.2	5	100	120	0.7
TC2V4	2.4	5	100	120	1
TC2V7	2.7	5	110	100	1
TC3V0	3.0	5	120	50	1
TC3V3	3.3	5	120	20	1
TC3V6	3.6	5	100	10	1
TC3V9	3.9	5	100	5	1
TC4V3	4.3	5	100	5	1
TC4V7	4.7	5	80	5	1
TC5V1	5.1	5	80	5	1.5
TC5V6	5.6	5	60	5	2.5
TC6V2	6.2	5	60	5	3
TC6V8	6.8	5	20	2	3.5
TC7V5	7.5	5	20	0.5	4
TC8V2	8.2	5	20	0.5	5
TC9V1	9.1	5	25	0.5	6
TC10V	10	5	30	0.2	7
TC11V	11	5	30	0.2	8
TC12V	12	5	30	0.2	9

**Electrical Characteristics**  $T_A = 25^\circ\text{C}$  unless otherwise noted

Device Type	$V_Z @ I_{ZT}$ (Volts) Nominal	$I_{ZT}$ (mA)	$Z_{ZT} @ I_{ZT}$ ( $\Omega$ ) Max	$I_R @ V_R$ ( $\mu\text{A}$ ) Max	$V_R$ (Volts)
TC13V	13	5	35	0.2	10
TC15V	15	5	40	0.2	11
TC16V	16	5	40	0.2	12
TC18V	18	5	45	0.2	13
TC20V	20	5	45	0.2	15
TC22V	22	5	30	0.2	17
TC24V	24	5	35	0.2	19
TC27V	27	2	45	0.2	21
TC30V	30	2	55	0.2	23
TC33V	33	2	65	0.2	25
TC36V	36	2	75	0.2	27
TC39V	39	2	85	0.2	30
TC43V	43	2	90	0.2	33
TC47V	47	2	90	0.2	36
TC51V	51	2	110	0.2	39
TC56V	56	2	110	0.2	43
TC62V	62	2	201	0.2	47
TC68V	68	2	230	0.2	51
TC75V	75	2	240	0.2	56

$V_F$  Forward Voltage = 1.2 V Maximum @  $I_F = 200$  mA for all types

**Notes:**
**1. TOLERANCE AND VOLTAGE DESIGNATION**

The type numbers listed have zener voltage as shown and have a standard tolerance on the nominal zener voltage of  $\pm 5\%$ .

**2. SPECIALS AVAILABLE INCLUDE**

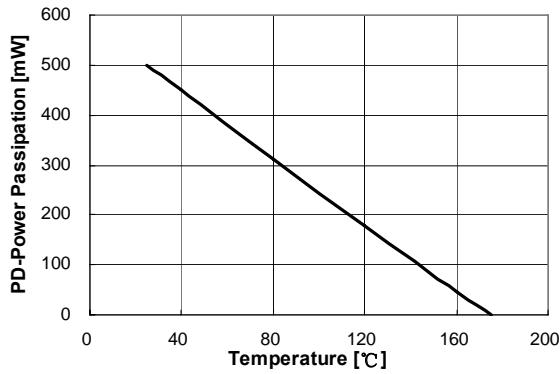
Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

**3. ZENER VOLTAGE ( $V_Z$ ) MEASUREMENT**

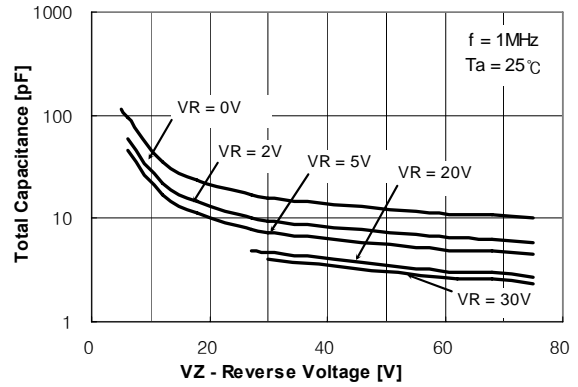
The zener voltage is measured under pulse conditions such that  $T_j$  is no more than  $2^\circ\text{C}$  above  $T_A$ .

**4. ZENER IMPEDANCE ( $Z_Z$ ) DERIVATION**

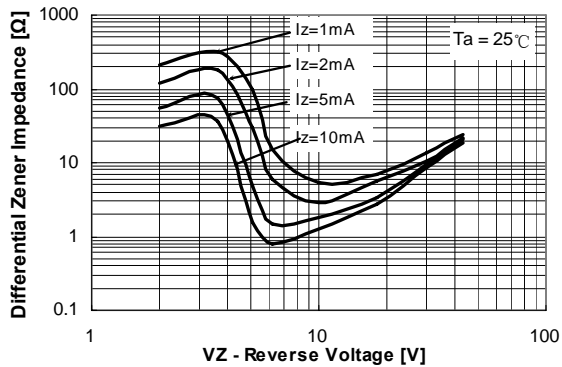
Zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an RMS value equal to 10% of the dc zener current ( $I_{ZT}$ ) is superimposed to  $I_{ZT}$ .

**Typical Characteristics**


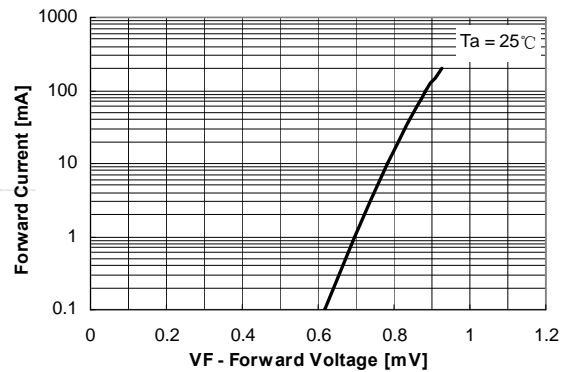
**Figure 1. Power Dissipation vs Ambient Temperature**  
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature



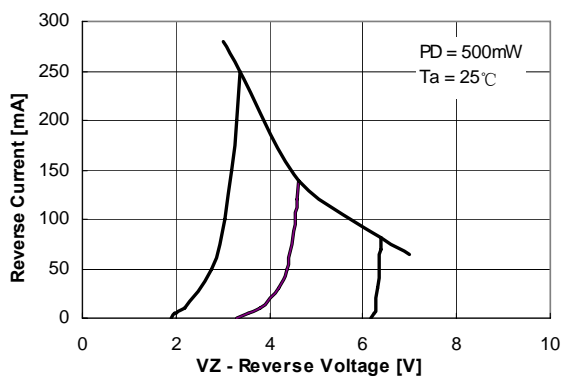
**Figure 2. Total Capacitance**



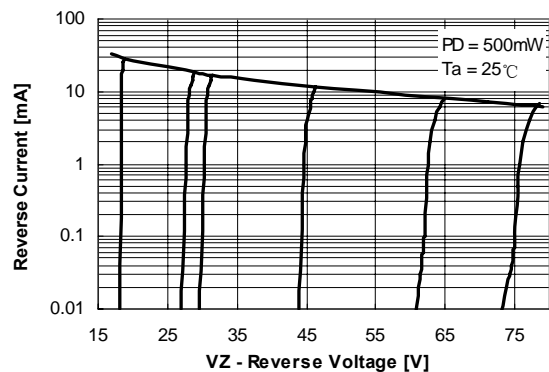
**Figure 3. Differential Impedance vs. Zener Voltage**



**Figure 4. Forward Current vs. Forward Voltage**

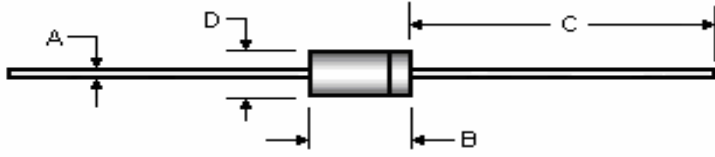


**Figure 5. Reverse Current vs. Reverse Voltage**



**Figure 6. Reverse Current vs. Reverse Voltage**

**Package Outline**

Package	Case Outline				
DO-35					
	<b>DO-35</b>				
	<b>DIM</b>	<b>Millimeters</b>		<b>Inches</b>	
		Min	Max	Min	Max
	<b>A</b>	0.46	0.55	0.018	0.022
	<b>B</b>	3.05	5.08	0.120	0.200
<b>C</b>	25.40	38.10	1.000	1.500	
<b>D</b>	1.53	2.28	0.060	0.090	

**Notes:**

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.

## **NOTICE**

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <http://www.takcheong.com>, or consult your nearest Tak Cheong's sales office for further assistance.